QUAESTIONES ENTOMOLOGICAE

A periodical record of entomological investigations, published at the Department of Entomology, University of Alberta, Edmonton, Alberta.

Volume 3 Number 3 31 July 1967

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Guest Editorial - Fascinating Taxonomy

It is often stated that insects form at least 75% of the kinds of animals. It is less often noted that this class is one of the most diverse in the animal kingdom, with several of its 30-or-so orders being sometimes thought of as more diverse than the entire phylum Vertebrata. From the taxonomic viewpoint, it is seldom remarked that while the vertebrates are in a highly classified state, with problems of taxonomy and nomenclature in the background, insects are at the stage where there is great taxonomic activity, much monographic work, and innumerable problems of nomenclature of all possible kinds.

These conditions justify no one in thinking that the insects are more important zoologically than the vertebrates, but they do make it obvious that the study of insect taxonomy today is likely to be much more complex than the current sort of work on vertebrate taxonomy. To many of us, this means more varied and more interesting.

A recent very extensive bibliography of mammals (Walker 1964) shows among the thousands of items only a very few monographs, virtually no major catalogs (except of type specimens), and few substantial faunal studies in the last thirty or forty years. There are a tremendous number of studies of single species, usually of some particular aspect of that species or its name. In fact, all the aspects of taxonomy together are virtually buried under an avalanche of more practical studies, occasioned by man's direct interest in these large animals as game, in zoos, and under conservation. This is the natural result of the fact that the species taxonomy reached a high state nearly a hundred years ago, with many monographic and faunal treatments at that time.

Although the formal taxonomic study of insects began at the same time as that of mammals, it progressed much more slowly, probably mostly because of the vastly larger number of kinds and the much greater difficulty in accumulating the necessary specimens. Large faunal studies are still being produced, as witness the Insects of Hawaii by E. C. Zimmerman. Monographs of tribes, families, and even orders are not uncommon in today's literature, even with the problems of obtaining publication, and generic reviews are legion.

In this situation, insect taxonomists are encountering all the possible problems of taxonomy, including many never faced by some of the vertebrate taxonomists. These latter may be the result of availability of thousands of specimens of some species; or of genera including hundreds or even thousands of species; or of the organisms being too small in size to be studied without special techniques; or especially of the two-hundred-year history of the names, over which span a variety of interpretations have been made and superseded, often by a larger number of reviewers.

In addition to all this, one major factor alone contrasts the present-day taxonomy of insects with that of mammals. This is the existence of many still undescribed species and genera of insects. Although there have recently been predictions that new species will soon taper off, there is as yet no clear indication of this, and the undescribed species now to be found in museums will keep taxonomists busy for years even if collecting turns up no more new ones.

Monographs, catalogs, and faunal studies never were so much needed in mammalogy as in entomology, simply because a mammalogist can be reasonably competent over the entire range of three to four thousand species. Many insect families contain more species than this, requiring a much higher degree of taxonomic specialization. And furthermore, it is probably much more difficult to distinguish 1000 species of one genus than 4000 species that are clearly distributed among a thousand genera.

For these reasons the taxonomy of insects is today far more diverse than that of mammals; probably far more demanding in discernment and discrimination; still wide open for major contributions of a variety of sorts; much more generally adaptable to statistical analysis of the variation of its species; less affected by the practical interests of man; and for all these reasons more fascinating.

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